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EXAMINER

GENCO, BRIAN C

ART UNIT PAPER NUMBER

2615

DATE MAILED: 08/10/2004

16

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/211,132

Applicant(s)

OHTA, SEIYA

Examiner

Brian C Genco

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 24-75 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 24-75 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. ____. |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

Applicant's amendment filed May 24, 2004 has been fully considered by the Examiner but is not deemed persuasive.

Applicant argues that Tanaka discloses to detect the position of the compensation lens shorter than the period of the V-SYNC at which each image is output, however, the period at which focus states are detected is constant and is equal to the period of V-SYNC.

In response, Examiner notes that Tanaka's detection of the speed and direction of the focus lens so as to trace the locus curves in Figs. 3 and 4 so as to maintain an in-focus condition, is a detection of a focus state (the zoom processing routine S305 is described in particular with relation to the zoom processing routine S205 described in column 6, lines 41-46; abstract). In particular, to detect whether or not the compensation lens is maintained so that the compensation lens follows the selected locus. As broadly as claimed, the claims do not limit to change the period in which, for example, a focus state is detected based on the high frequency components of the image signal as described in the AF processing routine steps S204, S304, S504.

Applicant argues that Kaneda discloses that the moving speed of a focus lens is determined on the basis of position of a zooming lens and focus lens, but not changed in accordance with zooming speed.

In response, Examiner notes that according to the equation on column 8, line 33, Kaneda discloses that the focus lens speed V_F is directly dependent on the zooming speed as described in column 8, lines 35-51. Also, note the description relating to the X term in the above cited equation wherein this coefficient is calculated based on the actual zoom speed as described on

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column 13, lines 53-60. Further as shown in Fig. 11 in step 204 wherein the moving speed is determined in accordance with the zoom speed, namely if zooming is being preformed the zoom speed is greater than zero and thus the focus lens moving is initiated and the speed is thus greater than zero itself. Alternatively, if there is no zooming, namely the zoom speed is zero, then there is no focusing, namely the focus lens moving speed is zero (column 11, lines 41-42).

New grounds of rejection are herein presented bellow so as to further clarify the Examiner's position.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 24, 30, 36, and 42-45 are rejected under 35 U.S.C. 102(e) as being anticipated by (USPN 6,184,932 B1 to Tanaka).

In regards to claims 24, 30, 36, and 42-45 Tanaka discloses, "The present invention relates to a lens control apparatus to be preferably used in a video camera (column 1, lines 6-7, Tanaka)," wherein the claimed "generation means" is an inherent quality of a video camera. Tanaka discloses the claimed "focus detecting" in column 5, lines 41-67 and column 6, lines 28-50. Tanaka discloses the claimed "control means" in column 4, lines 39-42, column 7, lines 48-67 and column 8, lines 1-44. Note figures 7, 8 and 10. Regarding claims 43 and 45 Examiner is defining the claimed "a period of a vertical synchronization signal" as the period between samples taken in the third embodiment. Examiner notes that Tanaka discloses to shorten the

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period of sampling, namely reducing the number of samples taken in a vertical synchronization period, when the moving speed of the zoom lens is low.

Claims 46, 48-51, 54, 56-59, 62, 64-67, 70, and 73 are rejected under 35 U.S.C. 102(b) as being anticipated by (USPN 5,438,190 to Kaneda et al).

In regards to claim 46, 48-51, 54, 56-59, 62, 64-67, 70, and 73 Kaneda et al, herein Kaneda, discloses the claimed invention in column 7, line 41 – column 8, line 51. In the above cited disclosure Kaneda explains to move the focus compensation lens with respect to the zoom lens in order to keep an in-focus state by selecting a locus, or zoom/focus region, based on the zoom lens position and the focus lens position, detect an AF value based on the amount of in-focus and to change the moving amount of the focus lens with respect to the AF value and based on a ratio of the actual zoom speed over a reference zoom speed to account for variations in the zoom speed. Kaneda also discloses the use of calculations in order to select the locus, namely the calculation of an AF value, wherein as shown in Fig. 11 the above determinations and calculations are continuous, namely each time the process of Fig. 11 runs, a focus locus is determined in step 208 and the locus information stored in memory corresponding to the selected locus is read out (column 9, lines 24-63). Also, as noted above, the selection of a new focus locus is determined corresponding to the moving speed of the zoom lens, namely if the zoom lens is stopped, focusing is stopped and thus no new locus is selected. Alternatively, the selection of a new focus locus is determined corresponding to the moving speed of the zoom lens, namely if the zoom lens is moving, flow of the process proceeds to step 208 wherein a new

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locus is selected. Kaneda also discloses changing the focus lens moving amount stepwise, or by a stepping motor.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 25, 26-29, 31, 32-35, 37, 38-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 6,184,932 B1 to Tanaka).

In regards to claims 25, 31, 37 Tanaka discloses, "The third embodiment is different from the second embodiment in that S510 and S512 are included in the flowchart. In S512, the specified number of times m is set to n' determined by the zoom speed. During low speed zooming, n' is reduced, and during high speed zooming, n' is increased. In S510, a fixed time is determined by the specified number of times m , determined by the vertical synchronizing period and zoom speed (column 8, lines 32-39, Tanaka)." Examiner is defining the claimed period as

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the period in which sampling occurs at high speed zooming. When the moving speed of the zoom lens slows, a sampling period slows as well according to the third embodiment. As such, if the zoom speed slows to be, for example, one third as fast as it was at high speed zooming then the number of samples taken is likewise reduced to one third. As a result, the focus state detection occurs by detecting the difference between the current focus state and the previous focus state that occurred three extraction periods previous.

In regards to claims 26, 32, 38 Tanaka does not disclose his/her invention has a detachable lens, however official notice is given that it is very well known and established in the art to make camera lens systems exchangeable in order to enable greater utility by providing more zooming options. Therefore it would have been obvious to one of ordinary skill in the art to have made Tanaka's invention a exchangeable lens system in order to increase the utility of the device.

In regards to claim 27, 28, 33, 34, 39, and 40 see Examiners notes on the rejection of claims 26, 32, and 38. Tanaka discloses an "image signal ... is transmitted to ... an AF evaluation value processing circuit 115 (column 5, lines 34-36, Tanaka)," wherein an "AF microcomputer 116 controls a focusing frame for driving and controlling a lens and for varying a focusing area in accordance with the strength of an AF evaluation signal (column 5, lines 45-48, Tanaka)." Tanaka also discloses, "A timing generator 124 generates a vertical-synchronizing signal and inputs it into the AF microcomputer 116 (column 5, lines 59-61, Tanaka)," wherein the AF microcomputer 116 "detects a vertical scanning period of the video signal," namely the signal generated by the timing generator. Tanaka further discloses, "a video camera system according to the present invention can also be implemented by inputting the vertical-

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synchronizing signal from outside (column 8, lines 52-55, Tanaka).” Note that the video signal generated in any video camera is inherently based on “television format information,” wherein the format information is “obtained from the imaging apparatus main body via a communication,” or in other words the format information is inputted as disclosed by Tanaka.

In regards to claims 29, 35, 41 Tanaka does not disclose how his/her invention’s lens system is driven, however official notice is given that it is very well known and established in the art to use stepping motors to drive lens systems in order to enable use of a common means for moving a lens. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have used stepping motors to drive the lenses in order to enable use of a common means for moving a lens.

Claims 52, 53, 60, 61, 68, and 69 are rejected under 35 U.S.C. 103(a) as being unpatentable over (USPN 5,438,190 to Kaneda et al) in view of (USPN 6,556,416 B1 to Kyuma et al).

In regards to claims 52, 53, 60, 61, 68, and 69 Kaneda et al, herein Kaneda, does not disclose that the lens system of his/her invention be detachable. Kyuma et al, herein Kyuma, discloses, “as one method of realizing more functions and higher image quality, it has been proposed to use an interchangeable lens system as a lens system for a video camera, so that it has been become possible to realize a video camera capable of coping with any photographic condition (column 1, lines 28-32, Kyuma).” Note that both inventions relate to lens control in order to maintain an in-focus state while zooming. Therefore it would have been obvious to one of ordinary skill in the art to have changed Kaneda’s invention to have an interchangeable lens in

order to increase the number of functions and the quality of images rendered by the video camera. Note that in combining these inventions differences in the structure of control take place, namely the introduction of separate microcomputers for the lens and camera body, as is the conventional case for interchangeable lens-type cameras, wherein the various changes to these control structures will be described below.

In regards to the claimed detection means and control means being in the camera in reference to figure 21 Kyuma discloses an AF microcomputer which computes an AF evaluation value and determines a driving speed of the focus lens and the direction for the focus lens to be driven. This information is then sent to the lens microcomputer where the focus lens motor is driven in accordance with the control data supplied by the AF microcomputer located on the camera body (column 23 line 66 – column 24, line 12, Kyuma).

In regards to the claimed detection means and control means being in the lens in reference to figure 16 Kyuma discloses the lens microcomputer has an AF program which controls the diving of the focus and zoom lenses in consideration with the sates of a zoom switch, an AF switch, and an AF value which are supplied by the camera microcomputer, wherein the claimed detection means occurs in the lens microcomputer AF program.

Claims 47, 55, 63, 71, 72, 74, and 75 are rejected under 35 U.S.C. 103(a) as being unpatentable over (5,438,190 to Kaneda et al) in view of (5,436,684 to Hirasawa).

In regards to claims 71 and 74 Kaneda et al, herein Kaneda, discloses to change the “moving amount of said focus lens in correspondence with the moving speed of said zoom lens,” however Kaneda does not disclose to “decrease the moving amount of said focus lens as the

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moving speed of said zoom lens is higher.” Hirasawa discloses to also change the “moving amount of said focus lens in correspondence with the moving speed of said zoom lens,” however Hirasawa also discloses in claims 1 and 2 to stop the focus lens whenever a speed change, or moving amount change, of the zoom lens occurs. After the zoom lens has changed its speed the focus lens then resumes focus tracking (column 9, lines 29-45, Hirasawa), wherein when the zoom lens speed is changed so that the “moving speed of the zoom lens is higher,” the control means disclosed by Hirasawa then “decreases the moving amount of said focus lens,” namely stopping it. Note that both Kaneda and Hirasawa disclose inventions to correct the moving speed of the focus lens with respect to the moving speed of the zoom lens. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to have included Hirasawa’s control system with Kaneda’s in order to prevent blur “due to unstable operations before and after the change of speed (column 4, lines 32-33, Hirasawa).”

In regards to claims 72 and 75 see examiners notes on the rejection of claims 70, 71 and 74. Note that Kaneda discloses the process of obtaining an auto-focus (AF) signal and to move the focus lens in response to this AF signal (column 2, line 59 – column 3, line 6, Kaneda), wherein it is very well known and established in the art to increase the moving speed of the focus lens if the AF signal is low in order to obtain an in-focus state faster. Official Notice is taken. Therefore it would have been obvious to have increase the moving speed of the focus lens if the AF signal is low in order to obtain an in-focus state faster.

In regards to claims 47, 55, and 63 note that the control step disclosed by Hirasawa is a control step to control the “moving amount of said focus compensation lens ... inversely proportional to the ... moving speed.” Note the rejection of claims 71, 72, 74, and 75.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian C. Genco who can be reached by phone at 703-305-7881 or by fax at 703-746-8325. The examiner can normally be reached on Monday thru Friday 8:30am to 4:30 pm.

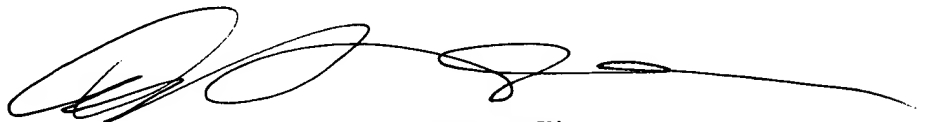
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Christensen can be reached on 703-308-9644. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the customer service office whose telephone number is 703-308-4357.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Brian C Genco
Examiner
Art Unit 2615

August 9, 2004



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